

**Abstract**

A heterodyne system provides a first signal and a second signal in response to a received drive signal, wherein the frequency of the first signal divided by the frequency of the second signal is an integer ratio. A mixer receives the first signal and the second signal and provides a series of mixing products. Spurious signals generated by the mixer are offset from a designated one of the 5 mixing products by integer multiples of the frequency of the second signal divided by the denominator of the integer ratio when the integer ratio is reduced to its lowest terms.